



The MINUTEMAN

Official Newsletter of the Minuteman Repeater Association

Volume 15, Number 3

November 1987

Weston Repeater 146.22/82 Undergoes 'Rebirth'

We are proud to announce the birth of a new repeater at Weston. The happy event took place on Sunday, October 18, 1987 at approximately 7:00 p.m., at which time the new child repeated its first words. For astrology fans, this makes the repeater a Libra. We will call it an "it" lest we run the risk of being sexist.

Its lineage is a brand new Hamtronics transmitter and receiver which has been modified.

Most of you are well aware that a repeater consists of much more than a transmitter and receiver, but for readers not familiar with the operations of repeaters one can appreciate that it is necessary to construct a chassis, power supply, and circuits and boards that permit the repeater to take the incoming signal, properly reproduce it, send it intact through the COR (Carrier Operated Relay) — and in the case of Weston — be processed by the Controller, and sent to the transmitter.

Matt, KA9CRG, volunteered to take the transmitter and receiver and to create a repeater around these components. This was a vast undertaking for any one person, especially in view of the fact that he was employed full time as an engineer for two radio stations. We also owe a great deal of gratitude to Scott, KA1CLX, who had already constructed the audio and interfacing for the controller at the Marlboro 146.01/61 repeater. Scott consulted with Matt in the design of these components.

In September, Matt was faced with having to relocate to Vermont as the result of securing more advantageous employment. He began at once to put in hundreds of hours of work to have the repeater operational. Thanks to these efforts, and to a kind and understanding former employer, the repeater was nearly ready by the time Matt was required to assume his new duties in Rutland, VT.

Matt coordinated with me to finalize the installation, and came down from

Rutland on October 16 to complete the operation. This was the weekend of the Charles River operation, and chief technical gurus who otherwise might have assisted, were helping with this public service event. On Saturday the 17th, I met with Matt at his former radio station and we worked into the evening to solve a problem, but the presence of strong AM in the near field of the station negated scope analysis. This did not stop Matt. He took the repeater to Boston, burned the midnight oil and solved the problem.

By Sunday we were ready to interface the repeater, and by 7 p.m., it uttered its first cry. We knew it was not perfect, and

there was some audio distortion, but the signal was intelligible, and we had great reports of improved receiver sensitivity.

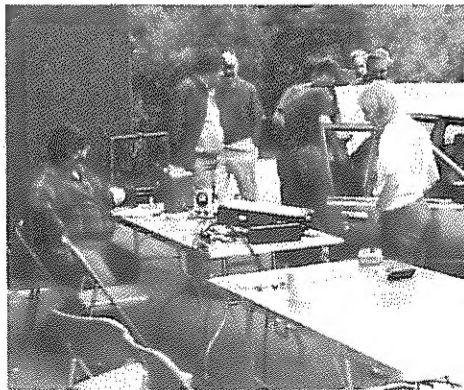
I made the decision to put the repeater on the air for the week, allow it to "burn in" and accept input from our control operators and members to evaluate its performance. Matt once again arranged to come down from Rutland to finalize the installation and perfect the audio.

On Saturday, October 24, Andy, N1BHI and Scott, KA1CLX, offered their technical expertise to assist in the final design, tuning and interfacing with our present controller. Matt had designed

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MMRA Sponsors Transceiver Clinic

In September, the MMRA sponsored its first annual VHF Transceiver Clinic. It was held on the scheduled rain date,



which dawned cloudy and sprinkly, but we decided to go ahead and risk it. Barry, K3BUZ; Scott, KA1CLX; Al, KA1AL; and I, N1BHI; met at Al's office. He had kindly agreed to allow us to use the parking lot behind his building and to steal some of his electricity. He even provided the extension cord.

Scott arranged for some high-powered test equipment: A Cushman Test Monitor and Telwave watt meter along with all the other tools of the professional radio service technician. Many thanks are due

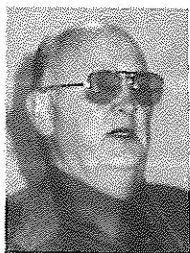
Scott and his company, Masscom, for getting that equipment.

We had about eight or so "customers" and we went through a complete check of their mobile systems — power output, deviation (voice and tones), receiver sensitivity and selectivity, and mobile antenna system checks.

The highlight of the day occurred when the young daughter of one of the hams waiting in line to have his equipment checked slipped into the front seat of his car and released the hand brake. Several deep breaths, followed by one or two shouted epithets, caused me to look up from what I was doing. I watched in shock as the errant auto rolled toward my Jeep, then slid behind it, jumping the birm surrounding the parking lot. The only damage was to the pride and composure of one small lady. We managed to pick up the small Japanese car and put it back in the lot.

Overall, judging from the reactions of those who attended the clinic, the day was a success. We should definitely do it again and are planning a similar clinic in the Spring. Watch for more details in May.

Andy, N1NHI



President's Report

Trustee Wanted

The MMRA is seeking one or two persons to take over the trusteeship of the Quincy repeaters. Joe Devin, W1MWF, the present trustee of the 146.67 repeater and Tom Holmes, WA1ZID, the present trustee of the 224.40 repeater, have asked to be relieved of their duties. Both Joe and Tom have put in years of service and kept our relations with the city of Quincy and the operation of the repeaters in the best of condition. Anyone interested in becoming a trustee should contact a club officer or the *Minuteman* newsletter editor, Peter Costa, WA1VVF, at 237-4175. It can be an interesting job for anyone who wants to be more than an appliance operator.

Phone Patch Note

Bob Ling, W1IBF, points out an error in the phone patch code information that was mailed out with the last newsletter. He says you have 4 (four) seconds to enter the code after the beep, not the 2 (two) seconds previously indicated.

Membership Dues

For those who have not yet paid their 1987-88 dues, remember the costs of printing and mailing this newsletter are paid for by a portion of your dues payment. It may not be possible in the future to send copies of the newsletter to those whose dues are seriously in arrears. Of course, changes in the phone patch codes will not be forwarded to those members who have not kept their dues payments up to date.

General Membership Meeting

September 21, 1987

The president called the meeting to order at 7:45 p.m. Frank, WIJDO, explained that the funds allocated for the raffle were limited by budget constraints to \$75 per meeting. Generous donations greatly augmented the prizes for this

meeting. It was voted that the first ticket drawn would have the choice of the table, with the remainder following until all prizes are claimed.

K1IAO initiated a discussion concerning a member, KC1FH, who was calling AAA on the patch to request assistance for his disabled vehicle. When the business nature of the call was questioned, KC1FH and K1IAO both called Steve Manning of the FCC for his opinion. He indicated there would be no trouble as long as no pecuniary gain was conferring to the amateur. Further lively discussion ensued, the general conclusion being that it is still not acceptable to order a pizza over the patch, but a call to a garage in an emergency is probably all right.

The budget as published in the September 1987 issue of *The Minuteman* was approved unanimously.

Royce Sawyer, N1BPU, was our guest speaker. His talk will be reported in the next issue of *The Minuteman*.

After the speaker, the raffle was held and the meeting adjourned at 9:19 PM.

Minutes of Board Meeting

October 27, 1987

The Board was called to order by president K1IAO. KA1AL, KA1CLX, WB2DCL, K1PBL, KB1FZ, K1IAO, K3BUZ, N1BHI, W1TMO, and WIJDO were present. KA9CRG was absent.

KB1FZ reported that Dan Odem would have to modify his talk for the club at the November meeting to avoid using company proprietary material. We are still seeking programs for the January and March meetings.

K1IAO reported that the trustees for the 144 MHz and 220 MHz repeaters in Quincy had resigned. New trustees must be found for both Quincy machines as soon as possible.

WIJDO and KA1CLX reported on K1JHT's generous donation of a 3AT 220 Mhz Handitalkie for a club raffle. The board decided to hold a special raffle with tickets priced at \$5.00 each, winner to be drawn at the March meeting. Persons bringing in a new member will be given a free ticket.

The Board voted to assume the function of the nominating committee this year, with the goal of providing a slate of officers for publication in the March newsletter.

A sum of \$135.00 was approved for past annual report fees and a revival fee to get

the corporation back in good standing with the state.

Rent for the Weston repeater site shall be paid in January as desired by the Campion Center.

EGE, Tel-Com, Rivendell, You-Do-It, Heathkit, and Radio Shack are candidates for newsletter ads, and will be put on the mailing list, as will ARRL and the FCC Boston office.

Installation of the new repeater in Weston demonstrated that the controller is not maintainable due to limited documentation. It was a prototype and changes added after construction make circuits hard to follow on the hardware. If the controller develops problems, it will be hard to find volunteers to work on it. Thought must be given to ways of financing a new \$1,000 controller for 82 soon. The new controller would reduce telephone costs by \$7 per month.

KA1AL reported that a new 100-foot tower would be placed on the planned Arlington receiver site in spring, and that we should be able to implement this remote receive site with the equipment we have if we build or buy a voting logic board.

Accidents can be reported to the State Police by dialing 1-800-525-5555. Unfortunately, this will not work through the autopatch because the 800 area code is rejected by the controller. We plan to correct this as soon as MMRA can afford a new controller.

The meeting was adjourned.

Respectfully submitted,

Barrie, K3BUZ
Secretary

MMRA Officers and Staff

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617-326-6179
Vice President . . . Matthew J. Valteau, KA9CRG
Secretary Frank P. Morrison, KB1FZ
Treasurer Robert M. Fraser, K1PBL
Clerk Barri Brozenske, K3BUZ
Directors (1 yr. terms) . . . Alan E. Kunian, KA1AL
Scott R. Bullock, KA1CLX
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Raffle Committee Report

The raffle committee reports the following prizes were won at the September 21st meeting at Campion Center:

- Metz 2-meter magnetic mount antenna, won by Bill, W1QEC;
- Orchid plant, won by Hunter, N1SI;
- Bill Rogers Sport overnight bag, won by Gerry, KA1OUI;
- 100 foot roll of 52-ohm coax cable, won by Wayne, KA1ENT;
- Portable gas soldering iron, won by John, W1KIM;
- ARRL Antenna Handbook, won by Pete, W1IAZ;
- Large can of spray wash, won by Bruce, K1FFX;
- Orchid plant, won by Gerry, K1GOI;
- Book about transistor circuits, won by Gerry K1GOI.

The two-meter mag mount antenna, Bill Rogers bag, and orchid plants were generously donated by Metz Communications Corp., Gilford, NH, Road Runner/Active Child Framingham, and John Stacy, W1KIM, respectively.

Frank, W1JTO
Scott, KA1CLX

Secretary's Note

The response to the last Newsletter mailing, with the information return sheets, was very gratifying. We now have 225 members paid up for 1987-1988, with 220 left to go. The changes in addresses and phone numbers were most helpful in updating the membership database. Members are reminded that the renewal dues are \$20, or \$30 for a family membership.

Those of you who have not yet mailed in your check for 1987-1988 membership renewal are urged to do so at your earliest opportunity. At the same time, be sure to fill out the return data sheet with any updated information on addresses or phone numbers.

In Memoriam

Rev. Daniel Linehan, SJ, WIHWK

November 7, 1987

On Sunday, September 27th, our great friend Father Dan passed away at the Glover Memorial Hospital in Needham after a short but difficult illness. Father was an inspiration to all of us in MMRA. He was always there to give us advice, information, and assistance with all types of problems. He always had a good word for anyone he met either on the air or in person.

Father was 83 years old. He was born in Prides Crossing, Massachusetts. He graduated from Boston College, and received many degrees from other colleges as well. Among his many achievements, he was also a great collegiate football player.

His specialization was in the field of Seismology. He wrote many papers for professional publications. He served for a long time in UNESCO of the United Nations, travelling around the world advising on the design of earthquake-resistant buildings. One of his scientific achievements was the early measurement of the thickness of the ice in the Antarctic by means of seismic technology. He also was responsible for the location of the catacombs beneath the Vatican in Rome. My wife, Jean, and I had the great fortune to meet Father in Rome and go through the catacombs with him. The tour was guided by a Dutch girl, but it was very amazing to all of us on the tour to hear Father tell the guide the real story of the excavations. He delighted in telling how he met the then Queen of England who came to Rome to observe the exploration of the catacombs. On this same trip, we also had the good fortune of joining Father in a visit to the Vatican Amateur Radio Station.

It was Father who was frequently called upon for studies of dams, reservoirs, highways, and the location of water supplies. He was instrumental in the location of the present Massachusetts Turnpike. Much of his work is being carried on by a group of his former students who were encouraged to form their own Seismic exploration firm, Weston Geophysical Engineers in Westboro, Massachusetts. Up until his retirement some ten years ago, he was the director of the Weston Observatory at Weston College. He, with his colleagues established a New England network of remote, seismic stations, using both telephone lines and VHF radio. He was

always called upon to locate earthquakes throughout the world by means of the seismic equipment at Weston.

In amateur radio, he was one of the first amateurs to make phone patches from the Antarctic back in the early 1950's, using a pair of Gonset twins. He was also the first priest to say a mass at both the North and South Poles. On one of his trips to the Antarctic, he was commissioned by General Electric to test cable insulated with silicone rubber. He found that the penguins liked the silicone rubber so much that they would eat it! In addition to Amateur Radio, he was a great photographer. He took thousands of pictures during his travels all over the world, and he will be long remembered for his many lectures on the Arctic, Antarctic, Africa, etc.

I was fortunate to have first met Father Dan back in 1950 at the time that he established the Observatory. He was not only one of my first customers for laboratory test equipment, but also became my best friend. When we first organized the Minuteman Repeater Association, it was through his efforts that we were able to locate the Weston repeater at what is now the Campion Center. He was one of our early Control Operators, and was always available to provide help to many of our members. He was an avid amateur operator working all bands from his station at Campion Center. He never stopped learning, and at the time of his passing, he was striving to learn to use a computer.

Father is survived by two sisters, Marjorie and Geraldine (WA6CNW), and a brother, Jerome. He is interred at Weston in the Jesuit Cemetery.

We of MMRA have lost a great friend. We will long remember him as having inspired us to form and operate one of the finest amateur radio repeater organizations in the country.

ROBERT A. WATERS, W1PRI

Weston Repeater

Continued from page 1

this repeater to enable it to work independent of a controller in the emergency mode, and to be able to interface easily with a different controller.

Our many thanks to the owner of Masscom Communications, Scott's employer, for allowing him to take some \$35,000 of test gear to the site. Without this equipment we could not accomplish what had to be done. I extend my gratitude to Andy, who organized "finalization Saturday" with almost no advance warning, and who certainly could have used this time perfecting the repeater wherein he is trustee (Marlboro 01/61).

Except for a lunch break, Matt, Scott and Andy worked relentlessly to perfect the installation, make major design changes, and alignment, and to interface to our present controller. At about 7 p.m. on Saturday the 24th, it became apparent that a problem developed with the controller.

This was the original K1BC controller which is a hand-built prototype with many boards, hand wiring, and which occupies one whole 19" rack. We had documentation, but it was not accurate because of design changes through the years. It is modern and more compact and perfected form controls 01/61 and the 450 repeaters at Marlboro.

The things that this controller will do despite its advanced age, compete favorably with many modern controllers, but it became apparent to the assembled technical crew, that its mechanical construction, labyrinth of wiring coupled with its lack

of proper documentation, made it a nightmare to repair in the event of a major failure.

I had to leave at 7:45 p.m., but the crew stayed to fix the controller. Much later that evening, Scott discovered a broken wire at the bottom of the rack at the telephone decoder, and thought that this might be the culprit. It was a single strand wire wrap, and when Andy touched it to its projected location, the repeater functioned normally.

Final adjustments were made and the weary crew left after 11:30 p.m. The unanimous decision was to blame me for the broken wire because I wasn't around to defend myself, which blame I graciously accept.

There is no real way to thank the above individuals involved for the time, effort and personal expenditures, or the companies which donated certain parts and equipment, or to Matt for refusing to be reimbursed for his monetary outlay for parts. He said that it was his pleasure to donate this with his skills as a gift to the MMRA. Honorable mention to Bob, WICMR, who constructed the power supply which we borrowed from another brand new chassis for this repeater.

The final result is a state-of-the-art repeater which equals or excels anything out there today; you may say that you know of repeaters with more bells and whistles, but remember that this is a function of the controller. My estimated cost to the MMRA for this project is only about \$650, and based on information that we are gathering about a new controller, we will be able to obtain one that far exceeds the capabilities of the present

controller, and most others on the market today, for only about \$1,000. To this end we may need to find ways to raise capital unless our paid-up membership enrollment grows.

The next projects for Weston will be to improve performance of the final amplifier, and to proceed with the Arlington Link; we will keep you informed of progress in the news letter.

Please try 22/82 and see how you like it. In the interim please help us feed and nurture the new baby.

Al Kunian, KA1AL
Trustee, Weston Repeater

Handi-Talkie Donated

Dave, K1JHT, has made a generous donation of a mint condition ICOM-3AT, 200 MHz handheld transceiver, which he won 18 months ago at an MMRA drawing, for the Club to use as a raffle prize. Special raffle tickets will be available at the MMRA meetings in November, January and March, for \$5.00 each, or will be given free to members who bring in a new member (a person who was not a member from 1 September 1986 to date). The drawing will be held at the Reading meeting on 21 March 1988.

Verification of credit to persons bringing in new members will be allowed if the new member indicates his sponsor. This may be done via the application, or by written affirmation of the new member prior to the drawing.

Tickets to sponsors of new members will be available at the November, January and March meetings.

November 17 Meeting



The next meeting of the MMRA will be held on Tuesday, November 17, 1987 at the Islington Community Church in Westwood, MA. The speaker will be Dan Odum of Raytheon Equipment Development Laboratories. Dan will discuss propagation characteristics from DC to Light.

MMRA

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